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Puerperal Fever:
its Nature, Pathology,
Symptoms, & Treatment.

Puerperal Fever

Perhaps there is no subject in the whole realm of medical or obstetric inquiry towards the solution of which the general practitioner looks forward with more eager hopefulness & expectancy; and there is no other disease in the whole range of the nosology which he approaches in the practical execution of his duties at the bedside with so much dread & with feelings of well nigh absolute despair, than that disease which has long been known scientifically and still popularly as Puerperal Fever. That these feelings were begot of the unsettled state of the question goes without saying as the limit of his personal experience and his knowledge derived from

a study of recorded epidemics instead of illumining his path, tended only to confuse him the more and paralyse his judgement. Yet amid all the admitted difficulties which surround the subject there is no other which we know of which better reflects the rapid marches of Pathology and demonstrates its progress from the antiquated crudities of earlier times to the more exact almost mathematically exact scientific expressions of the present. We need only mention in rapid review the different theories which have engaged medical attention during the last quarter of a century to appreciate how much we owe to Pathology and to anticipate still brighter results in the not distant future. When we remember that at one time the condition was ascribed to the suppression of the

lochia - at another to the metastasis of milk. Following these, the manifold & protean disease was referred to inflammation of Uterus & peritoneum - Lymphatics & veins. Then again and to the present hour the doctrine of a specific puerperal Fever - a Fever sui generis takes a place commanding a good deal of attention - able advocates pinning their faith to it and causing one of the large divisions of opinion upon the subject. Some again argue from the similarity of uterine surface to the surface of a stump after operation as presenting the same conditions and the same liabilities. Others again failing to recognise a unity in the disease believe rather that the common name included a multiplicity of puerperal affections Lastly and we come down to the present

day, the doctrine which forms the the large division of opinion and which is becoming more and more generally received because it is the result of a more rational pathology and therefore more susceptible of proof is that of Puerperal Septicæmia or Blood Poisoning. These then are, in a word, the different theories which have been suggested, and which in a way have been transition stages, in the flux of opinion purporting to explain the various and varying conditions which were comprehended under the generic terms Puerperal Fever. Let us examine these

In the first place, however, we have to record our objections to the continued use of the terms Puerperal Fever as they too readily suggest the

idea of a specific affection, which in a few pages we shall proceed to show does not exist. It is wonderful however in referring to authors upon this subject how many of them still cling pertinaciously to the use of these old terms when their whole argument is engaged in demolishing the idea which these terms express. (This same remark extends further over the profession as it embraces within its grasp all those who in colloquial conversations on the subject still employ the older terms & by doing so very often cloud their discussions) Of course such loving retention can only proceed from a feeling which permeates the whole profession that innovations even in nomenclature are not to be too readily adopted and old associations and old landmarks ruthlessly swept away. This is the

more charitable view than believing that the persistent use of the term implies a haziness of the subject & a self-conscious dread that after all their teaching may not shed any more light on the subject, if it does not plunge some benighted wanderer after truth into still deeper darkness and uncertainty.

In thus cutting away such an old familiar landmark, what have we to substitute in its stead as a more expressive label. Here at the very outset difficulties impede our path. It is easier to destroy than to build up. Some have been suggested, more or less accurate according to the view taken up or the preponderating importance of some single symptom - but none which will group together the

ever-changing types of this dire disease. We say none – but we qualify it by asserting that if the view which we embrace as the latest most scientific expression of pathological research is accepted then it is within the power of language to hit off exactly the precise condition. But while we gladly hail the newer and more modern name thanks to a more enlightened and scientific Pathology, we pause to ask whether under the old terms Puerperal Fever, all the epidemics that have been recorded can possibly be grouped? Do they all talk of the same disease? Some, we read were of such a malignant nature that the most desperate remedies had to be applied and failed withal. Others again were of such a very mild type that a simple single dose of Dover

was sufficient to stay the progress of the disease and divert the morbid action into healthy routes. Indeed so different and contradictory have been the records of this disease that the question has arisen as to whether they had not included a thousand different disorders under the one appelation By retaining the older terms we only perpetuate the old difficulties and the old mistakes. By accepting the new we rid the subject of its many incumbrances - and lay the basis for a brighter and more scientific - and more intelligible understanding of the superstructure.

Having given our reasons for the inappropriateness of the name of the disease we pass on to consider the various theories already quoted which profess to explain its nature.

how in every one of these there is an element of truth. Even in the earlier and ruder theories this element appears though unconsciously. The latest theories - if it be not the one now in vogue - none of them express the full truth. The last most recent, and most generally accepted theory embraces all the others with the exception of the one which teaches a specific puerperal fever. It involves and implies the suppression of the lochia - the metastatic disappearance of the lacteal Secretion - gives a character to the inflammation of uterus & peritoneum - lymphatics & veins - involves all the conditions attaching to a breach of surface - is multiple and manifold in its manifestations May more, it embraces these other theories which to my mind are but detached ideas comprehended under the generic

term Septicaemia or Pyaemia - that it is a putrid fever due to the absorption of foul matter from the Uterus - that it is the result of traumatism - that it is analogous to Surgical Septicaemia that it is due to the invasion of the system by microscopical organisms.

Having thus reduced the otherwise wide subject into the narrow compass of embracing two opposite schools of thought, each of them supported by names which in themselves are sufficient to carry conviction and promoted by evidence carefully garnered and jealously recorded, as well as with a delicately poised balance the judicial mind brought to bear upon the evidences produced can discriminate to what side preponderance is directed. In what follows of this thesis, we shall attempt a critical

review of the two leading doctrines already ~~enumerated~~ enunciated - embodying where applicable our own experience - and in the end throwing in our vote with that doctrine and that School to which we consider modern Science most inclines.

We shall now proceed to the consideration of Puerperal Fever as a specific affection.

Puerperal Fever a specific Affection:

The prevailing idea of this theory is, of course, the specificity of the affection. It claims equal rank with Syphilis, Typhus, Smallpox & Cholera, as it possesses its own specific "Contagium" or "germ" and arises only in the puerperal condition. It is thus a Fever sui generis. This view while it still commands a certain amount

of attention, is it is needless to say, losing grip in the profession. Those who like Dr Fordyce Barker & Dr Kidd claim for it the power of explaining a great proportion of the puerperal fevers - do not regard it as explanatory of all the fevers which arise in the puerperal condition. Indeed they are both cognisant of, and careful to express the fact, that fevers do occur in puerpery where the specific origin is not available - but which are more easily and better explained by septic influences, arising it may be auto- or endo-genetically - but whose clinical symptoms are very much akin to those which are exhibited in the specific affection. The difficulty therefore arises in being able to discriminate between those of septic and those

to influences +

and those of specific origin. Epidemic prevalence is to the believers in this theory sufficient guarantee of its specificity. The study of the histories of Epidemics, they say, establishes a strong argument in favour of their position.

Let us glance for a moment at the epidemic which broke out in the Dublin Rotunda in 1854-55 as described by Dr. McClintock. The main facts are these: that before the epidemic declared itself - a few sporadic cases had arisen of varying severity: and during the 12 months previously puerperal peritonitis and phlebitis with a few isolated cases of Typhus & Scarlet Fever had visited the house. Then a short time elapsing as if the mysterious influence were gathering force, it broke out not only in hospital practice — but all

over the city in domiciliary practice the clinical history showed likely - the symptoms running so acutely and death supervening so rapidly that the numbers of those confined were decimated. During this period the epidemic was marked by enormous virulence - and it extended far and wide over the city and nearly every one attacked died. Then the scourge began to abate - the symptoms became less severe - more patients recovered, and fewer fresh ones were attacked. In this way the epidemic gradually spent itself. After reviewing these facts Dr Kidd says in a very able paper read before the Brit Med || Medical Association & contributed to the Journal Aug 2nd 1884, "Is not this the history of an epidemic? Does it not remind one of the history of Cholera or of Smallpox -

epidemics of which are also characterised by their gradual approach marked by sporadic cases - their furious onslaught and their gradual subsidence indicated by diminished violence and the increased number of recoveries"

Again to Fordyce Barker base his belief upon the specificity of the affection in much the same line of argument. Perceiving plainly however that Septicaemia must rank as a very prominent & potent factor in the causation of puerperal fever - and convinced that those large epidemics are not capable of being so explained but are of specific origin he set himself the task of differentiation. He says "the epidemic disease to which I have just referred differs in all characteristic points from what is known as Septicaemia

It differs in its origin, its modes of attack, its symptoms and its anatomical lesions. In puerperal fever the symptoms are frequently manifested a day a two before or even during labour even when the child is subsequently born alive, In Septicaemia the symptoms are never observed before or during labour except when the foetus is putrid" How exception may easily be taken to this distinction as a differential point. As to whether it is possible for a woman to become the recipient of septic poison & subject to septic influence before the birth of her child I make not the smallest doubt. A healthy mucus membrane is not at all unlikely or unable to absorb such materies morbi. As well may we argue

against the impossibility of ~~Septic~~ Syphilitic infection under the same conditions, and if we allow the one he cannot reasonably refuse the other. Again "he says" Puerperal fever originates from epidemic causes & from Contagion and infection. He latter from nosocomial malaria - from auto-genetic infection and from direct inoculation" "the fact that puerperal fever may be epidemic when all the causes of nosocomial malaria (such as aggregation bad ventilation, contact with Septic material &c which have a tendency to induce Septicaemia in Surgical cases) are absent seems to show a difference between the two diseases" how while we recognise the extreme subtlety of this argument we think it sufficiently answered by the fact

carriage and transmissibility of septic influences – their all pervading nature and the extreme predisposition to their reception.

We would further remark upon the general line of argument that those who object to it, do so on the ground that the "epidemic" so called is confined to the practice of a single hospital, medical man or midwife. We consider this, ~~according~~ in view of the evidence cited, a very flimsy answer. Could it be proved that the epidemic were confined to the practice of a single hospital, medical man or midwife, then there would be room for the insinuation. As a matter of fact, however, it looks rather as if a wave passed over the country at times – let it be explained by "epidemic

constitution" or atmospheric influences
or how you will, and I have myself
observed in my very limited experience
that on the only occasion in which it
presented itself in my own practice
and while I was deeply puzzled &
concerned as to the genesis of the
first case, have I been struck with
this idea of an epidemic influence
when I learnt that the same
scourge was busy in towns & villages
around me and committing the same
sad havoc. Indeed the very fact that
it creeps into all social grades of
women and occurs at the hands of
the most eminent Obstetricians - where
every facility is possible for the carry-
ing out of the most rigorous antisepti-
-sm and where the highest skill
is available, is surely reason enough

to constitute it a subject of the very gravest importance not to be easily or lightly dismissed. Notwithstanding all this, no matter how much or little may be ascribed to epidemic or atmospheric influences in the causation of the disease, it cannot but be admitted that the bulk of evidence is rapidly gathering in proof of the preventibility of the disease - and less and less is forthcoming in proof of its specificity. And though, even yet, in the teeth of prophylaxis & active antisepticism cases do occur - it is now an established fact beyond all cavil that their number is fewer and their virulence less severe. And the hope is cherished that when the old idea of specificity becomes

the relic of a bygone race - and the new theory and the new treatment became better understood - and developed with the progress of a rapidly progressing Pathology till our knowledge and our command over this disease have reached that point of ascendancy which they have already attained in the cases of Smallpox and Enteric Fever.

We shall now approach the consideration of the subject from the Septicaemic point of view.

Puerperal Fever is Puerperal Septicaemia!

It is perhaps one of the noblest triumphs of modern medicine that we are able to read Puerperal Septicaemia for Puerperal Fever. The displacement of terms which tended to render "confusion worse confounded" by others so suggestive was the first step in the right-

direction. Looking at the whole history of the subject beginning at the time when mere repression of the lochia was believed to be the cause of the disease and tracing it down through its different phases on the one hand; and our accumulating and progressive knowledge of the germ theory of disease - the demonstration of Phlebitis & Lymphangitis — of Thrombosis & Embolism by Virchow and Lister's work in connection with the action of septic poisons, and the influence produced by the development of bacteria on the other, seems to me to be the natural logical path to the larger generalisation which comprehends all these conditions and which has found a "local habitation and a name" in Puerperal Septicemia. Come to it how

we choose the fact remains that this theory satisfies nearly all demands includes within its grasp all those protean forms which older writers pointing to "Puerperal Fever" with the finger of scorn as including a "thousand disorders" (Kirkland) is accepted by the leading writers of the present day and although as yet incapable of answering every detail - the Pathologist bids us hope that the future will reveal what we now are pleased to take on trust.

We go further & say that it is not enough to fix upon any the component elements comprehended under the larger idea and ascribe to it the power of explaining the disease. It is not simply a putrid fever due to the absorption of foul matter from the uterus - it is not simply the result of traumatism - it is not enough to say that

it is analogous with Surgical Septicæmia - it is not simply due to the invasion of the system by microscopical organisms. It is a compound of all these - the product of their inter-reactions - in a word it is Septicæmia & Pyæmia.

Burdon Sanderson supplies us with the best basis of description when he says "in every pyæmic process, we may trace a focus, a centre of origin, lines of diffusion or distribution and secondary results from the distribution. In every case an initial process from which infection commences, from which the infection spreads, and secondary processes which come out of this primary one."

This then is the expression of the theory most consonant with our present knowledge and it rests with us now to apply the principles

involved in order to work out and elucidate them as they are exhibited in the puerperal state. In doing this we will more immediately follow the lines laid down by Dr. Robert Barnes in a paper on the Puerperal Fever contributed to the British Medical Journal 13th May 1864 in which he shows a rare combination of extensive physiological knowledge and acute diagnostic skill. Recognising in the condition two undeniable factors 1st A poison, 2nd The possibility of that poison being generated within the body, or being conveyed to it from without he establishes the two great practical divisions Autogenetic & Heterogenetic.

The autogenetic cases are those which arise from the self development of septic matter will first engage our attention.

Taking an actual case we observe that so soon as the child is born the

female organ begins a set of processes chiefly of demolition in striking contrast to the building up processes which have been taking place during the gravid condition. The gravid condition is one of high nervous and vascular tension as shown by the liability to convulsion and the appearance of albuminuria. The diseases of the puerpera are exactly the reverse. The blood of the gravida contains increased fibrin - fewer red blood corpuscles - increase of water and increase of white blood Corpuscles. This is the condition of blood which begins the puerperal condition and therefore affords a fitting nidus for the inception and development of poisonous material. After a short period of rest usually about 2 days - the processes of involu-

ution begin which consists in getting rid of the waste stuffs in order to bring the womb down to natural unimpregnated proportions. Here an immense revolution begins. These waste stuffs must be got rid of - and besides escaping as Lochia - the greater duty is thrown upon the absorbents to take these up - to modify them & pass them into the blood - so that they may ultimately be thrown out. A special call therefore is made upon the absorbents - Lymphatics, vessels & skin and if they fail to answer - then the result is the retention of this waste stuff unmodified in the blood. Hence Toxaemia.

Advancing further in our analysis and making allowance for the proper modification of these waste stuff - if the emunctories ey skin, lungs, & Kidneys are

sluggish the same thing happens – the retention produces set up toxæmia.

Both these evils may coexist, the waste products may not be modified and the emunctories may not be fit for the extra work and the result is Toxæmia.

Still the onward course is crowded with danger. It is a curious fact that the obstetric act is always attended with some breach of surface. This may be the result of the natural expulsive efforts or Traumatism. Beginning with the raw site of placental attachment we occasionally find that the cervix has suffered some degree of laceration – the anterior lip often undergoing, too, a certain amount of rupture & contusion probably rendering it œdematous by the pressure of the head against the pubis. Then again

the gliding action of the head often separates the mucus from the submucous tissue tearing the connecting vessels & causing extravasation between; and lastly as it passes through the outlet - especially in primipara - the fourchette usually gives way.

Here then are numerous points from the one end of the birth tract to the other open to the reception of poison. If no poison collect these wounds heal rapidly & the gate so to speak are shut against intrusion The same remark applies - if the wounds are a day or two old and in the granulation stage

But if blood or lochial discharge remain in utero or vagina and air finds its way into contact decomposition takes place. A foul fluid bathes the

mucous tract and as surely reaches the circulation and poisons it through one or other of these breaches in the wall This is really septicaemia plus toxaemia. Apropos of this let us quote a single sentence from Barnes. "Whenever the blood is poisoned, be it with septic stuff or other, the natural process of purification - of excretion of the waste stuff is obstructed — the balance between disintegration absorption and excretion is lost. The simple septicaemia cannot exist."

We have thus followed a case from the gravida to the puerperal condition - traced the physiological processes into pathological ones + recognised the different ways in which a patient can suffer from self — auto-poisonment. I think it is a fitting

task to draw fine distinctions between the Kinds of poisoning. It is surely well agreed upon – that if the state is not one of Septicaemia or Pyaemia it soon will be, if the conditions hold.

Our next duty lies in trying to trace the sources of Heterogenetic infection. In these cases the poison is carried from without. Now it may be remarked, as a broad general statement that any decomposing organic matter may infect – but that some operate with more certainity & virulence.

We shall try to enumerate & examine a few of the sources from which hetero-genetic infection springs – but to enter into any explanation as to how the conditions operate I must confess my inability. Indeed I may go further and assert that our

knowledge of this matter is to a great extent empirical and therefor no satisfactory explanation is as yet possible.

We shall begin with the observation of Semelweiss that cadaveric poison may be carried from the Dissecting & Post-Mortem Room & be inoculated by the examining finger. Other poisons - the result of diseased action may also cling to the obstetric finger. The evidence in proof of this is indeed very strong and a Statistical examination has rendered doubt[illegible] impossible

Of all the diseases capable of originating Septicaemia there is no other occurs to the professional mind more common and therefor more fertile than Erysipelas in

all its forms. Indeed it has been surmised that the poisons are identical But that as it may the association of Erysipelas with Puerperal Septicaemia has been observed both in hospital & domiciliary practice. The identity of the poison has been proved, or attempted to have been proved by the observance that the child of a woman who died of Puerperal Septicaemia was taken with Erysipelas & succumbed. Dr. Murphy tells us that the 2 diseases often prevail together. This latter observation has often been verified.

Again, it is a well authenticated fact within the knowledge of every practical man that puerperal Septicaemia is something indistinguishable from it may originate from the Contagium of other Zymotic diseases. Though authorities differ upon this point, still the bulk

of evidence points to the truth of this remark. It is with the Scarlatinal poison that most observations have taken place, and round which the bitterest discussions have centred. Dr. Braxton Hicks has given a numerical argument to prove that Scarlatinal poison may & does induce Puerperal Septicaemia though he also confesses that it may induce Scarlet Fever with all its attendant & distinguishing traits. The same remark applies to other Zymotics which we shall afterwards consider.

Why Scarlet Fever should in one puerperal case cause Septicaemia and in another case reproduce itself has been thought by Playfair to be explained by the poison being absorbed through different

channels. If absorbed through the skin typical Scarlet may be supposed to result — if brought into contact with lesion in genital tract, then Septicemia will follow. (vol II page 336).

The remarks of Barnes bearing upon the liability of the Scarlatinal person to produce Septicemia in the puerpera are very valuable in this regard. He quote 'in extenso'. "It has been the fashion to say that Scarlatina in a puerpera is Scarlatina and nothing more. It is something more. The Scarlatina finds in the puerpera, blood loaded with refuse stuff which it cannot excrete a medium specially favourable to the development of mischief. The subject may have had Scarlatina before. She may have enjoyed the full degree of protection until she became pregnant. Under this protection contact with the Scarlatinal person may

have been harmless. If inhaled or otherwise absorbed it failed to ferment. It was quickly eliminated. But if the poison enter the puerperal blood, its elimination is arrested, the morbid train is fired. We have developed a form of Toxaemia compounded of the autogenetic forms previously described, and of the Scarlatinal poison. This is very different from simple Scarlet-Fever. In these cases the Scarlatinal rash and sore throat are often awanting. The poison works in a specially prepared field in a special manner. It throws out of order the puerperal process. It arrests or prevents the disintegration process the due absorption by the lymphatics the modifying action of the lymphatic glands - the excreting function of the lungs, skin and kidneys. Thus

we get a complex poison - which cannot be called waste stuff poison - septicemia pyaemia or Scarlatina - but is a compound of all & perhaps of some new unnominate poison - the product of their interreactions".

With regard to the other Zymotics less evidence is forthcoming - but undoubted cases of Puerperal Septicaemia have been traced to exposure to Zymes & diphtheritic contagia.

Again, exposure to sewer gas has been credited with the production of Septicaemia in the puerperal state. That the product was not Enteric Fever was proved by immediate convalescence on the removal of the patient from her bad sanitary environment.

Dr. Leishman insists upon the possibility of a case of simple Inflammation

terminating in puerperal Septicaemia.
He says "a simple inflammation is not
communicable: but when a case at
first simple runs a rapid course
and ends fatally with the symptoms
let us suppose of peritonitis & metritis
combined he would be a bold man
who would venture to assert that
there was no danger." (page 784)

One more emotional disturbance
often play an important part in
the production of Puerperal Septicaemia
by acting disastrously upon the process
of secretion & excretion. It may so affect
the heart & nutrition that the blood
curdles. It is too well known that the
mothers of illegitimate children are
exceedingly prone to yield to this
disease on account of the depressing
mental attitude which their condition

instances.

Lastly that puerperal Septicaemia breed septicaemia there is not the slightest doubt. Perhaps this is the most prolific cause of all - and the records of the disease only too plainly shew that it is accountable for the large endemic prevalence in lying-in wards. No special miasm need be called up, as there are countless ways in which septic material may be carried. That it is contagious in a very virulent degree the so called "epidemics" are sufficient to prove. The poison may be communicated from private patient to private patient through the medium of the medical man in attendance. Gordon himself confessed to have been the means of carrying the infection to a great number of women. Indeed it is the painful recognition

of this fact by the medical man that makes it of such terrible moment and when once it has cropped up in his practice sets himself to the very searching & serious examination as to his probable share in its causation. We need only refer to the literature of this part of the Subject to find an easy explanation of the so-called epidemics and a telling answer against the Specificity theory.

We have thus seen that Puerperal Septicaemia may originate from extraneous causes- and that the poisons from different diseases & diseased actions may beget a disease altogether indistinguishable from Septicaemia.

While we embrace this interpretation

of the disease we do not willingly ignore the fact that it too has been beat upon by the fierce light of modern criticism. The idea of autogenesis has been most violently assailed. To regard the lochia as a poisonous fluid is a preposterously unwarrantable assumption. Champneys in the "Year Book of Treatment" asserts that the autogenetic theory is a dangerous one as it diverts attention from the great fact that if a woman has puerperal Septicaemia, the poison has almost certainly been introduced from without" We consider this stricture too severe as it undoubtedly implies culpable conduct on the part of those on whom septicaemic cases should arise

Then again objection is taken to this view because it leaves out of count simple inflammation. Fordyce Barker

says that this teaching "would give the impression that no cellulitis, metritis - peritonitis & after labour could have any origin but septicaemia derived from the importation of a specific poison" Now it may readily be conceded that the puerperal woman is not exempted from simple inflammations - but it frequently happens that cases which during life were supposed to be simply inflammation turned upon post mortem examination to have been due to septic infection and doubtful cases should be considered as probably septic.

While it may be an easy matter to raise objections to this or to any theory it cannot but be granted that all medical opinion is shaping to the belief of this particular one: Some smaller points

points of detail, there may be which we cannot understand or reconcile - but the general consensus of evidence is all in favour of Septicaemia. It is too true that Surgical Septicaemia is not an altogether open letter to us - yet within the few past years how rapid have our strides been in our knowledge of the subject - in formulating principles derived from actual experiment. And since these principles were first mooted as applicable to the puerperal state it cannot but be admitted that a clear line of light is beginning to show on the horizon. Take it for all in all - it is the best theory - the most rational theory - the most comprehensive theory and therefore the most approved theory which modern science has given us.

We shall now proceed to consider the Pathological phenomena exhibited by the disease

Pathology.

To the various morbid appearances which have been described, depend as much as anything the difficulties which have enveloped the subject. It has been too commonly the practice to select a single tissue which has probably borne the brunt of the morbid action as furnishing the explanation of the disease: and to descriptions have multiplied to such an extent as to make a plurality of affections without a single element in common. Yet it is to this department of research we are indebted for the insight we already possess - in discovering the unity amid plurality and in tracing clearly the vagaries of the disease within strictly scientific lines

Recent Pathology teaches that the disease

is a pathogenic bacterium capable of living and multiplying within the body. It is not a special fluid as it may exist in many putrid fluids - and the infective material of other diseases may be the cause of Puerperal Fever.

The channels of diffusion through which the poison acts are various, and according to the particular channel will the disease necessarily assume a certain form and probably a certain degree of virulence. This affords an explanation of the multiform character of the disease

It is here to be remarked that the place where the poison enters usually coincides with one or other of the lesions in the mucous tract. Morbid action supervenes here & has been compared in appearance with a dissection wound. In some few cases known local changes seem inappreciable & yet a fatal issue

has resulted. This has been explained by the rapid absorption of a very virulent septic matter overwhelming the individual at once & causing death before local changes had time to appear. It has however been presumed that very minute changes had taken place in the blood & the tissues which could not be detected at an ordinary Post Mortem.

To return however to the site of absorption we find a very angry appearance of the part. The protecting epithelium having been removed - the bacteria penetrate into the subjacent tissue. A very violent local inflammation ensues - the edges swell - become edematous - are yellowish in appearance and are covered with a diphtheritic like membrane. The inflammation which has a gangrenous tendency spreads

by continuity of tissue till the whole mucous membrane of the womb is affected. General Endometritis ensues - the mucous membrane becoming profoundly altered - softening ulcerating - and tending rapidly to necrosis. In severe cases the inflammation may spread by contiguity of tissue & affect the muscular tissue causing a general Metritis - the muscular tissue also softening ulcerating - & tending to disintegration & necrosis.

But there are various paths in which the septic material may travel & produce different local conditions - The septic inflammation may find its way along the Fallopian tubes & septic pus find its way into the cavity of the peritoneum. We have then a general septic peritonitis - with absorption of the products & septic poisoning"

The quickest routes to the blood and

therefore to general infection are through the lymphatics & veins. The septic matter is taken up from the lymph spaces which abound in the connective tissue surrounding the womb & carried along in the lymphatic canals to the glands Lymphangitis & Lymphadenitis result. Now unless the poison be all the more concentrated & virulent, and the resisting or colytic powers of the individual be all the less - the action instituted in the glands may expend itself there. Hiberg has called cases of this kind "Abortive Pyaemia". The glands therefore act as janitors to the general circulation. If however the morbid action is not arrested by the glands - if the janitors - so to speak - cannot resist the morbid impulses - then its passage is easy along the thoracic duct

to the general blood current and so a general blood infection is produced.

It was supposed by D'Espine that the rapidly fatal form of the disease was due to absorption through the uterine veins How this happens - seeing that the venous Sinuses must be blocked with ~~Emboli~~ Thrombi, is not evident. If however uterine contraction be imperfect - complete closure of the sinuses will not be possible. So septic material may gain admission. Imperfect uterine contraction as a point of practice must therefore be looked to. Thrombosis is likely to ensue - starting from the veins of the placental part of the uterus. If small emboli become detached - we shall have a Pyaemia with Suppurations in the joints and miliary abscesses in the lungs & elsewhere - & so a general blood infection ensues.

Again the inflammation may extend

by contiguity of tissue. In this way it affects the connective tissue of the pelvis - causing Pelvic Cellulitis & Parametritis. It may extend thus to the peritoneum causing a general Peritonitis - as we saw when the materies morbi was carried through the Fallopian tubes. The inflammation may further extend through the diaphragm and lead to a Pleurisy & Pleuro Pneumonia. "In all these cases there is a vigorous multiplication of the micrococci and that there must therefore be a great formation of chemical products. An acute septic poisoning is the result & it is probably this which leads to the more pronounced symptoms of Puerperal Fever" (Cocks 747-8)

Symptoms

It is needless to reiterate the statement that as the disease is not to be regarded

as a unity - it were impossible to describe a typical case. The symptoms are as protean and multifarious as there are channels of absorption - and forms of pathological change and instead of being required to describe one disease we would be compelled to embrace a legion. All we urge is that the element of Septicæmia is common and at the bottom of them all. We shall attempt the description of a case of pure Septicæmia in the puerperal state.

The symptoms generally show themselves within two or three days after delivery. It may begin insidiously. Sometimes there may be chilliness or even a rigor. This may be followed by free perspiration. Sometimes the rigor is repeated - & this is usually supposed to indicate further absorption. If this perspiration is critical - it is of good augury - but often it

brings no relief to the symptoms and continues profuse to the end. Generally speaking however the skin is hot & dry. There is often a haggard expression of countenance and a dull headache. The temperature mounts to 103° a 104° & the pulse which becomes very feeble & compressible rises to 130-150. Extreme rapidity of pulse if accompanied with a very high temperature is usually considered of fatal omen. Vomiting frequently occurs ejecta being like coffee grounds & offensive. Diarrhœa often supervenes - evacuations being horribly offensive. The tongue soon becomes coated with a heavy fur-like in becoming dry and dark especially towards the termination of the disease. The lochia are often suppressed or become horribly fetid - especially if the disease is autogenetic. The breathing is hurried.

and panting and the breath has a characteristic, heavy, sweetish odour. There may be no pain or but slight tenderness or pressure over the abdomen or uterus - and as the disease progresses the intestines get largely distended with flatus - so that intense tympanites often becomes very distressing. If these symptoms go on the case usually ends fatally in a week - the fatal termination being indicated by more weakness - rapid threadlike or intermittent pulse - delirium may come on, or the intelligence may remain unimpaired to the last - great tympanites and sometimes a sudden fall of temperature until at last the patient sinks from all the symptoms of profound exhaustion.

These are as nearly as possible the symptoms accompanying a case in which the system has been thoroughly

saturated with the poison

It is no part of our intention to describe those cases where local complications modify the course of the disease. As before observed when treating of the Pathology, various tissues may be attacked and on which the full vigour of the disease is spent. In this way we saw that Endometritis Metritis, Peritonitis, Pelvic Cellulitis Lymphangitis, Uterine Phlebitis, Pleurisy & Pleuro-pneumonia, may each form the most remarkable feature of the disease. It is enough to know that any of these diseases may occur in the course of - and be the outward expression of Puerperal Septicaemia - without entering into a tedious narration of symptoms.

Treatment.

The treatment of puerperal fever must largely be determined by our choice of a theory. As we accept in the preceding pages the theory of a multiplicity of affections having Puerperal Septicaemia as the source of them, then our treatment must resolve itself principally into that for Septicaemia. Our ~~recognition~~ acceptance of this theory & this line of practice implies a recognition of moral obligations incumbent upon all who have to do with the delivery of women. Further - the recognition of the truth of this theory strike against the scientific propriety of large lying-in hospitals where nosocomial malaria such as bad ventilation, aggregation, contact with septic material may be present.

Of course a thorough system of Prophylaxis

and such a system has been very elaborately devised meets these difficulties. By adopting the measures enumerated below it is not necessary nor expedient that a medical man who may happen to be attending a patient suffering from Puerperal Septicæmia, Zymotic disease, or Uterine discharge should relinquish his obstetric work. These same measures if rigidly adopted minimise if they do not wholly annul the risks attendant upon lying-in Hospitals

Let us now enumerate and afterwards discuss the prophylactic measures which Dr Gaillard Thomas recommends should be carried out in all midwifery cases whether they occur in hospital or domiciliary practice.

1. The lying-in room and all within it should be washed with corrosive sublimate solution 1 in 1000.
2. Freedom on the part of attendants from previous infection
3. Disinfection of the hands of the nurse Vaginal antiseptic injection repeated every 4 hours during labour & a wet antiseptic napkin applied to the vulva throughout labour.
4. Disinfection of the doctors & nurses hands
5. Care in the third stage of labour & the administration of ergot 3 times a day for at least a week after labour.
6. Examination of vulva and repair of lacerations
7. Rise a right hours after labour antiseptic vaginal injection followed by an iodoform

Vaginal suppository - a syringe &
not an irrigator being used.

8. Use of a new glass elastic tract of
a silver Catheter

9. Care in the part of the doctor that
the nurse understands how to give
antiseptic injections

He goes on to say "It is clear that all
this will make of the process of parturition
in the future a more important event
than it has been regarded in the past
and she who is about to bring forth will
be treated as one about to undergo a
capital operation"

Now while we are perfectly willing
to subscribe to the absolutely correct practice
in theory which the observance of these
rules imply, yet we cannot observe the
confession that they are far too extra
vagant, wholly inexpedient, impracticable

& unnecessary in the majority of cases. Further in whatever light we regard the Obstetric act such ostentatious over-elaborated ~~measures~~ preliminaries would tend to impress the patient far too seriously and to incline her to a mental attitude which would not conduce to a speedy & favourable recovery. It presents a very striking contrast to our present mode of practice. Perhaps it savours too much and mixes the risk attributed to a too meddlesome midwifery.

We are at one with him in insisting on personal disinfection & absolute cleanliness about & around the patient. As to washing the lying in Chamber & everything within it with a Solution of Carbolic or Corrosive Sublimate we think unnecessary as a general rule. Then again we entirely object to this injection before the escape of the waters

and the birth of the child – and to keep her parts sodden throughout labour with a hot napkin to emphatically demur. The administration of ergot as directed is surely a superfluous proceeding so long as the processes of involution are going on properly. Some object to antiseptic injections after labour as they tend to dam up the lochia We think that in normal labour the practice is wholly unnecessary as we prefer to leave the organs in peace & content ourselves with sponging the external parts with some antiseptic solution or at most in washing out the vagina.

In presence of an actual case of Puerperal Septicaemia however our procedure is clear. It will be our duty to discover if possible to which class

autogenetic or hetero-genetic it belongs. If it be due to a retained part of Placenta or membrane – or whatever else it may be causing putrid lochia – our practice is clear & axiomatic – to wash out the uterus & vagina with some antiseptic solution. That this exercises a wonderful influence in reducing the symptoms consequent on absorption of septic stuff cannot be denied & it has also the tendency to prevent further absorption. A Higginson's Syringe with a long vaginal nozzle is usually employed for the purpose. The substance used in solution may be Carbolic Acid, Tincture of Iodine or Condy's Fluid

The general treatment varies with the character of the disease & as it is impossible to foretell what course & form the disease may take, so it is impossible to map out any distinct line of treatment

At first & in some cases antiphlogistic remedies may be indicated & it may be necessary to take away a little blood or apply a blister. Emaciation has fallen into desuetude. Here also it might be judicious to administer some such drug as Veratrum Viride Aconite or Digitalis.

For the reduction of temperature Thomas advises Cold in the form of ice cold water circulating through india-rubber coils applied all over the abdomen. This has not as yet met with much favour as a point of Practice. Reliance is mostly placed upon drugs such as Quinine - Carbonate Ammonia - Salicylate of Soda &c

Turpentine either internally or applied on Stupe a useful adjunct in those cases where intense tympanites prevails

Opium or Morphia is invariably demanded to subdue restlessness allay pain & induce sleep, Thornton's cap to the head may also help in this regard

Laudanum & equal parts of Belladonna & Glycerine applied to the abdomen in cases of much tenderness & distension are very grateful.

In cases of a chronic type where diarrhea is prominent Tincture of Kino has been recommended.

The dietary must form an important factor in this exhausting disease. Small quantities of highly nutritious food to be offered repeated in the 6 Hourly.

Again we repeat each case must be treated according to its individual symptoms